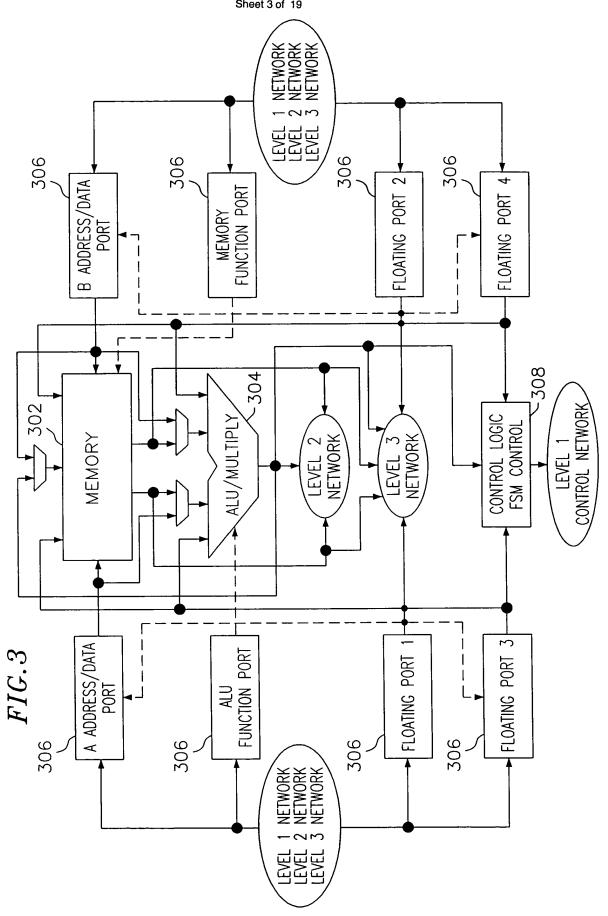Attorney: Peter A. Nichols
Docket No.: 51346/PAN/B600
Inventor(s): Ian S. Eslick et al.
Title: SYSTEM AND METHOD FOR EXECUTING
HYBRIDIZED CODE ON A DYNAMICALLY
CONFIGURABLE HARDWARE ENVIRONMENT
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FIG.1

Attorney: Peter A. Nichols
Docket No.: 51346/PAN/B600
Inventor(s): Ian S. Eslick et al.
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FIG.2

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FIG.3

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Inventor(s): Ian S. Eslick et al.
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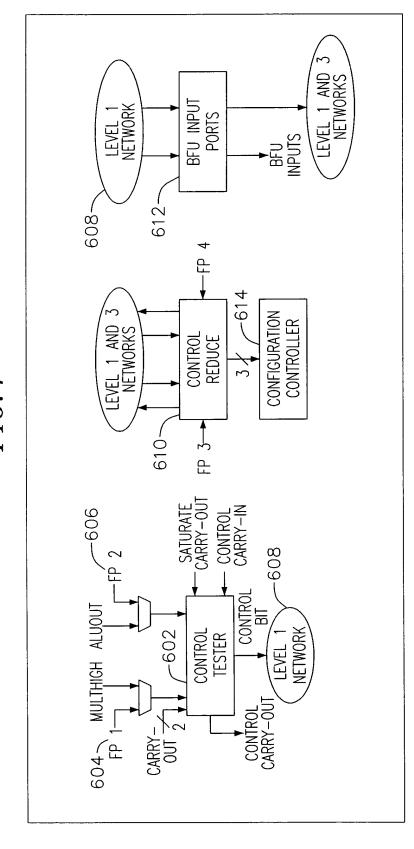CONFIGURABLE HARDWARE ENVIRONMENT
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FIG.4

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Inventor(s): Ian S. Eslick et al.
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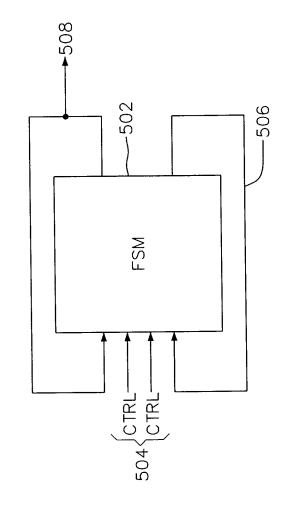CONFIGURABLE HARDWARE ENVIRONMENT
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FIG.5

508

502

506

FSM

CTRL
CTRL

504

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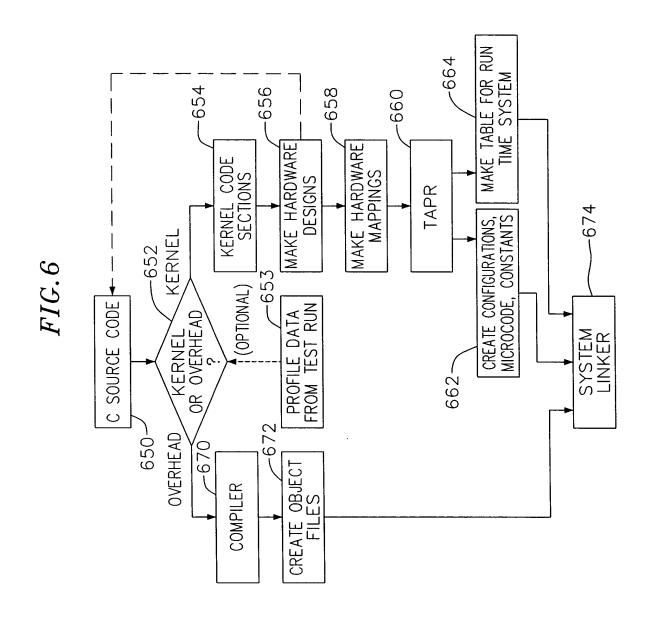CONFIGURABLE HARDWARE ENVIRONMENT
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FIG.6

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Inventor(s): Ian S. Eslick et al.
Title: SYSTEM AND METHOD FOR EXECUTING
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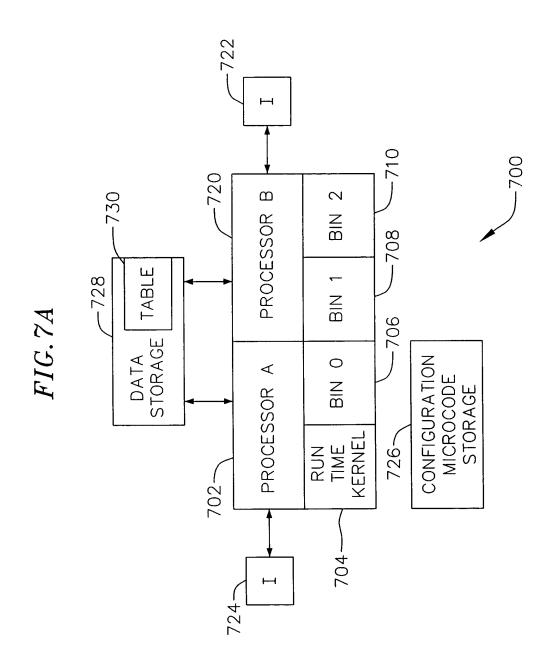CONFIGURABLE HARDWARE ENVIRONMENT
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FIG.7A

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FIG.7B

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FIG.8

704

RTK	CONFIGURATION DMA	802
	MICROCODE DMA	804
	ARGUMENTS DMA	806
	RESULTS DMA	808
	CONFIGURATION NETWORK SOURCE	810

• PERFORMS BACKGROUND LOADING
• PERFORMS COMPLETION DETECTION
• PERFORMS COORDINATION

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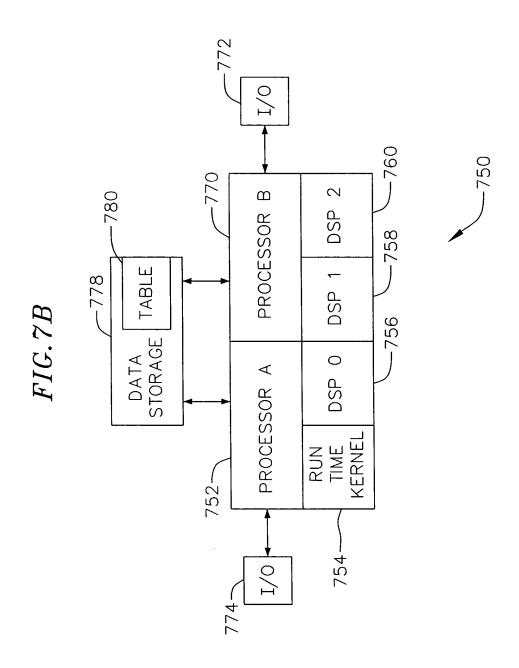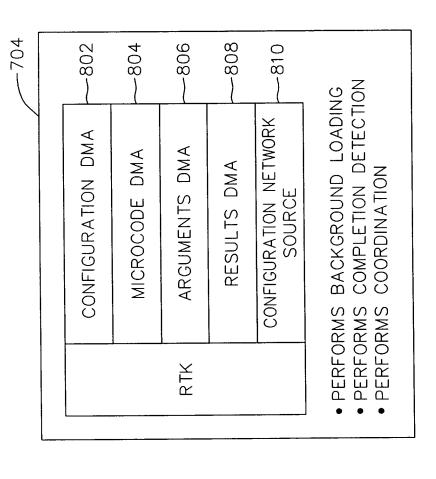CONFIGURABLE HARDWARE ENVIRONMENT
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FIG.9A

CODE 1   900

CODE 2   960

910
912
914
916
918
920
922
924
926
928
930

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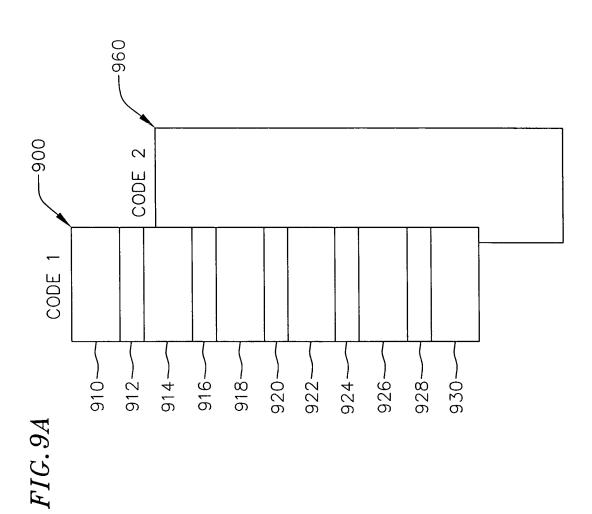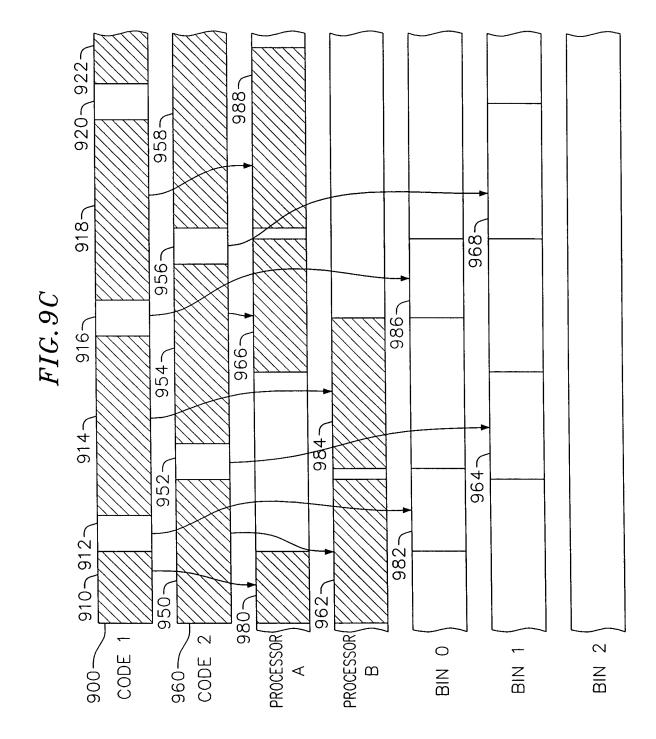CONFIGURABLE HARDWARE ENVIRONMENT
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FIG. 9B

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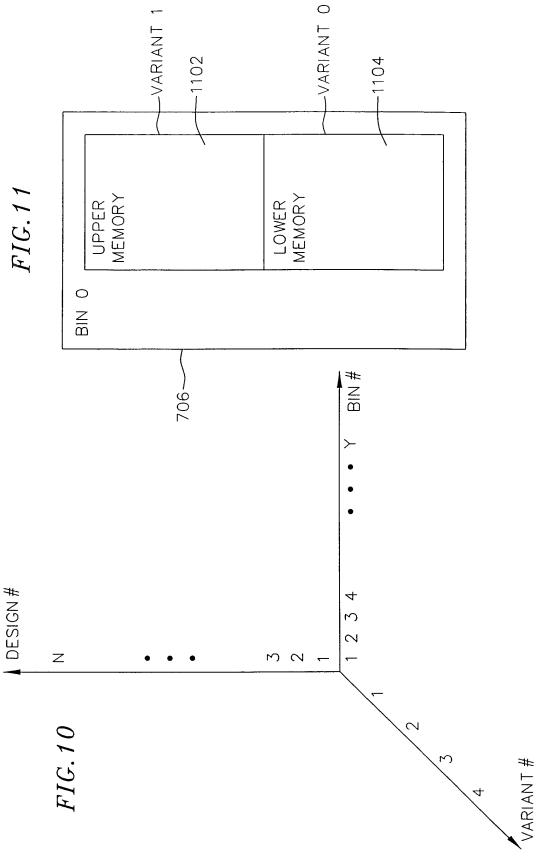Sheet 12 of 19

FIG.9C

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FIG.11

BIN 0

UPPER MEMORY

LOWER MEMORY

VARIANT 1

1102

VARIANT 0

1104

706

FIG.10

DESIGN #

N

3
2
1

1 2 3 4

Y BIN #

VARIANT #

1

2

3

4

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FIG.12

BIN 0   BIN 1   BIN 2

MEMORY 1202

1212

MEMORY 1204

1214

710

708

706

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FIG.13

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Title: SYSTEM AND METHOD FOR EXECUTING
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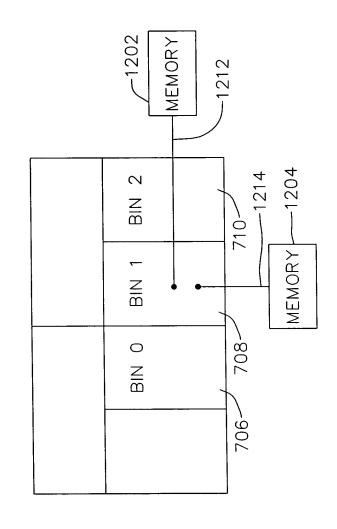CONFIGURABLE HARDWARE ENVIRONMENT
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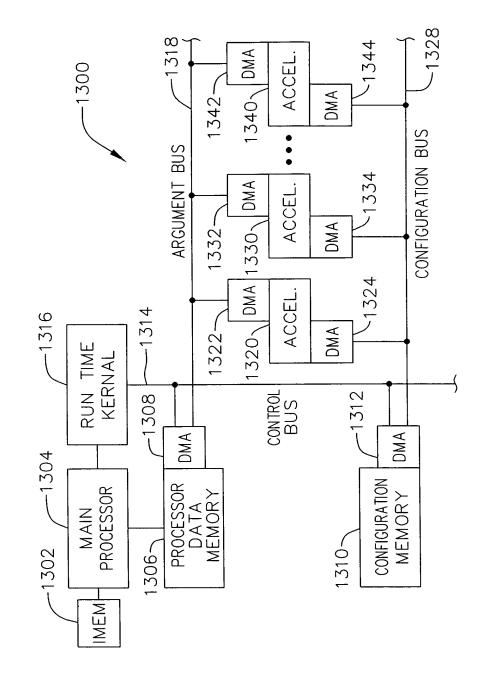
FIG.14

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FIG.16

1602 — EXECUTE CODE/CONFIGURATION CONFIGURE/LOAD NEXT "UNIT"

1604 — IDLE: WAIT FOR ARGUMENTS OFFLOAD

1606 — DMA ARGUMENTS TO PROCESSOR MEMORY

1608 — DMA ARGUMENTS FROM PROCESSOR MEMORY

1610 — WAIT FOR "GO"

FIG.15

1502 — EXECUTE SUBTHREAD

1504 — ASSEMBLE ARGUMENTS

1506 — SEND PACKET TO RTK

1508 — SELECT NEXT SUBTHREAD

1510 — RESULTS READY ?

NO

YES

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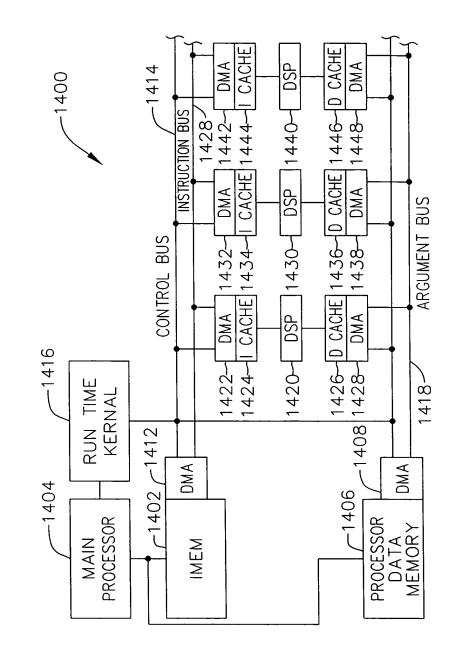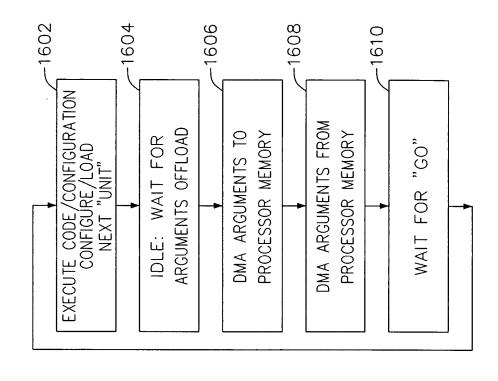CONFIGURABLE HARDWARE ENVIRONMENT
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FIG.17

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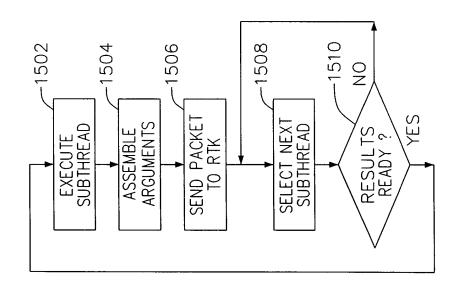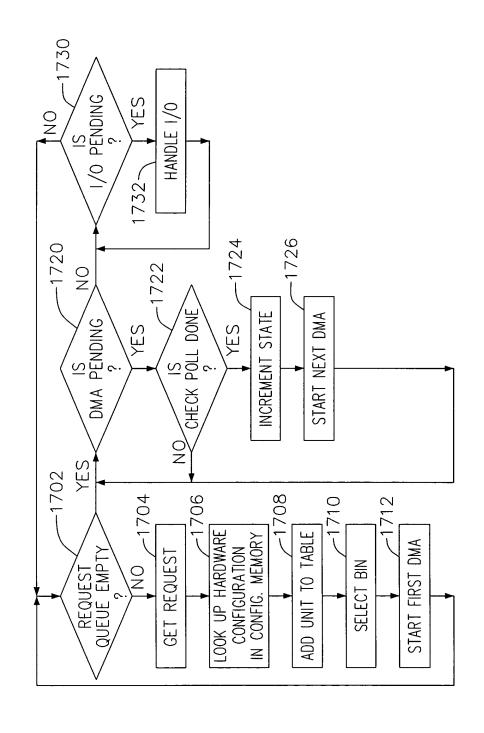CONFIGURABLE HARDWARE ENVIRONMENT
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FIG.18

HARDWARE ID	STATE	BIN	DMA PENDING	UNIT DONE
3	4	3	1	0